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INNOVATION AND OPERATION EARNEST WILL:  
A BLUEPRINT FOR FUTURE LOW LEVEL CONFLICTS

by

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: *P.H. Crowell*

20 May 1991

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## ABSTRACT

This paper raises questions regarding the U.S. Navy's readiness to deal effectively with low level third world threats. The employment of helicopters outside their normal mission areas during Operation Earnest Will, the Kuwaiti reflagging operation, is used as a basis for describing the the kind of innovative actions that will enable the armed forces to counter the low technology, guerilla war-at-sea scenarios which it will encounter in the future.

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## INTRODUCTION

"The escort mission and the threats faced in executing this task had no precedent. There were no checklists or doctrines to guide our efforts in accomplishing low intensity warfare, guerilla war-at-sea and conventional warfare. Those who faced the problems, improvised as they went along."

General George B. Crist  
former Commander in Chief  
U. S. Central Command

The navy today is faced with meeting three broad challenges which will affect not only how it accomplishes its mission but also how well it does it. In no particular order I see these as learning to operate within the reduced force structure that will be the hallmark of the decade to come. Next, learning to cope with a third world that is increasingly armed with more and better weapons. Even so, I do not necessarily subscribe to the argument that the world is becoming a more hostile place. I do believe it is becoming a more dangerous place, with the distinction being one of intention versus capability. Thirdly, we must deal with the increased tendency of belligerents to apply these weapons in unconventional ways. Many of our platforms and sensors are over-optimized for traditional Soviet style weapons and tactics. Today we are less likely to find ourselves in a conventional conflict with the Soviet Union and more likely to find ourselves facing attacks from weapons which we or our allies have developed.

This reality is yet another iteration of the requirement to do more with less. My thesis is that one way we can do this

is to change the way we think about force employment. We must look beyond traditional mission roles to take maximum advantage of the capabilities of not only our own forces, but those of the army and air force as well. This translates into the need for more joint operations and improved interoperability. In a 1988 article in Proceedings, Lieutenant Ken Ireland made an excellent case for improving the capabilities of helicopters. In part he said, "...the Navy must make the most of the airframes currently in the fleet or on order. Equipment modifications ...will enhance the capabilities of the existing naval helicopter force,...The opportunity to make the best use of national defense dollars through proper employment and outfitting, and enlightened command and control of U.S.Navy helicopters is upon us."<sup>2</sup> However, whereas he may have implied that the operation of army helicopters from navy ships was a limitation in our capability, I would take his thesis one step further and argue that this is precisely the kind of thing we need to do more of if we are going to get full value from the limited resources we can expect in the future.

My approach will be to address these issues by focusing primarily, though not exclusively, on one operation and one platform type. The operation is Earnest Will, the 1987-88 Kuwaiti reflagging mission in the Persian Gulf, and the platform is the helicopter. Hopefully, by highlighting some of the innovations which were employed, both army and navy, I can stimulate further discussion on how we might continue to expand our capabilities to meet the challenges ahead.

## BACKGROUND

United States involvement in the Kuwaiti reflagging operation stemmed from the increasing number of attacks on neutral flag tankers transiting the Persian Gulf. These attacks represented a degree of horizontal escalation in the Iran-Iraq war which had begun in 1980. In 1984, having lost its advantage in the ground war, Iraq began attacking tankers carrying oil from Iran. Iraq's intent was to reduce Iranian oil revenues and thereby affect its ability to prosecute the war. This was the beginning of an economic war of attrition which remained largely unresolved through 1986.

With all Iraqi oil being shipped to Mediterranean and Red Sea ports via pipelines, Iran was increasingly forced to retaliate against third nation ships calling on ports of the moderate Gulf states which supported Iraq. These attacks increased in frequency through 1985 and in late 1986 Iran began to single out shipping bound to or from Kuwait. In November Kuwait took the issue to a meeting of the Gulf Cooperation Council (GCC) and in December queried both the Soviet Union and the United States regarding requirements for reflagging Kuwaiti vessels under the flags of either of those nations.

Initially somewhat reluctant to get drawn into the Gulf conflict, the United States finally agreed to the action in May 1987. While the Reagan administration was never able to clearly enunciate what it hoped to achieve through this effort, it was able to define its desires in terms of our strategic



interests in the Persian Gulf.<sup>3</sup> First, there was the need to counter the growing influence of the Soviets who had readily agreed to the reflagging proposal. Second, there was a desire on the part of the administration to recoup some of the credibility it had lost in the region as a result of the revelation of the arms-for-hostages deal with Iran.

#### CONCEPT OF OPERATIONS

The administration's decision ultimately led to 11 Kuwaiti ships being reflagged. Only one however, the supertanker Bridgeton, was designed as a crude oil carrier. These ships carried a U.S. master and a military liaison officer. This latter position was filled by selected reserve volunteers whose job was to facilitate communications with the escort vessels.<sup>4</sup> The plan developed by CENTCOM had three or four warships escorting each two ship convoy past the most prominent threat, that being the Silkworm sites along the Strait of Hormuz (fig. 1). Cruisers were assigned to provide air defense while aircraft operating from carriers based in the Arabian Sea provided air cover until the convoys cleared the straits. Thereafter air force AWACS provided air surveillance along with a minimum of two escort ships, one leading and one trailing.<sup>5</sup>

The intention was to send one convoy every two weeks in order to permit the crews of the escort ships the opportunity to stand down from the prolonged periods of alert .

## THREAT

The initial and ultimately the most difficult problem encountered by the COMIDEASTFOR staff was in evaluating the threat which faced the convoy operation, codenamed Earnest Will. Of principal concern to the U.S. were the Chinese made Silkworm missiles which Iran had begun firing at Kuwait in December of 1986. The nature of the problem facing any ship transitting the Persian Gulf can best be understood by understanding the distances involved and the complexities of navigating through it. The total distance from the Dibba anchorage 50 miles from the Strait of Hormuz to Kuwait is nearly 700 miles. Passing through the straits brought the convoys close to Iran's declared 20 mile exclusion zone (fig. 2) and within range of the Silkworm missile sites. Once clear of the straits ships faced a treacherous 300 mile defined channel that at times came within one mile of Iranian waters. The final link is a 285 mile open water route from the Ras Tanura lightship to Kuwait. Despite ample intelligence estimates of Iran's mine warfare capability, navy officials tended to ignore this threat and felt once the convoys reached Ras Tanura the worst part of the transit would be behind them.<sup>6</sup> The fact that this was the only route available combined with the fact that the convoy schedules were public knowledge, meant that Iran had the advantage of picking when and where to attack.<sup>7</sup> In addition the U.S. weaknesses in mine countermeasures were well known. These weaknesses were

showcased to the world when on July 24 the Bridgeton hit a mine at the halfway point of the very first transit. As Anthony Cordesman points out, "A common mistake in low level war is to focus on the potential for success and underestimate the full range of risks."<sup>8</sup>

Michael Armacost, Under Secretary of State for Political Affairs, acknowledged as much in testimony before the Senate Foreign Relations Committee in June when he stated that the administration could not say what additional risks would be incurred through the reflagging. It is clear however, that the Silkworms were very much at the forefront of any discussion of the operation. The focus of administration thinking was revealed when he stated, "Of course, it would be foolhardy for Iran to attack American-flag vessels....they will be defended, if attacked."<sup>9</sup> As events were to prove, we did indeed underestimate the risk particularly from mines.

Mines however, were not the only threat the navy faced in the Persian Gulf. The xenophobic Iranian Revolutionary Guard Corps (IRGC) or Pasdaran had created a naval arm that operated Swedish Boghammers, small high speed surface craft which were armed with a combination of machine guns, rocket launchers and 106 mm recoilless guns. Some carried Stingers missiles which gave them a surface to air capability as well. These naval Guard forces operated from bases on land as well as oil platforms in the Gulf which doubled as surveillance sites and were ideally situated for observing ship traffic. The weapons and tactics employed by these forces made them much more of a

threat to the personnel on the tankers than to the ships themselves. Crews quarters were the targets of choice. What's more, Iranian President Hashemi Rafsanjani had raised additional concerns when he threatened to use Iranian fighters in suicide attacks.<sup>10</sup>

## REQUIREMENTS

Faced with a potential conflict of unconventional proportions, the navy was forced to adjust to a number of threats for which it was not well prepared. The shortcomings in mine warfare I have already alluded to and will come back to. The unconventional war-at-sea scenario which the Iranians had been conducting over the previous two years now posed a direct challenge to the U.S. Navy. Combat systems which were designed to cope with the more conventional high technology weapons employed by the Soviets simply could not respond in every instance to these less sophisticated systems. For example, the Phalanx terminal defense system would not lock-on to a slow moving target such as a light civilian aircraft.<sup>11</sup> Such a vehicle loaded with high explosives and operated as a Remotely Piloted Vehicle (RPV) or as an airborne version of the suicide truck bomb could seriously threaten any ship with which it came in contact.

In addition, the U.S. found itself involved in the growing conflict with very little in the way of public support from its European allies. More significantly it had virtually no base facilities from which to support the growing military presence it had committed to the region. The low technology war-at-sea demanded changes in force structure, employment, weapons and tactics. The focus from this point will be on the force structure and force employment aspect. The issues of weapons and tactics, while important and discussed to a limited degree, are outside the scope of this paper.

## MISSION EXPANSION

The Bridgeton mining incident caused an immediate increase to the size of the naval presence in the Gulf. The Middle East Force went from eight ships on July 24th to 31 by early September. At the same time, awareness of the little or no notice threat posed by the Iranian's prompted CENTCOM to begin tailoring its own forces to deal with this reality. Army special operations forces, navy SEALs, helicopters from the 160th SOAG (special operations aviation group) and tailored Marine contingency forces were quickly deployed to the area of operations.

While Iran lacked the high technology delivery systems available to Iraq, they had managed to create a major naval threat by exploiting their advantages in geographic location, tactics and personnel, ie. the ideological commitment of the naval Guards. In response the U.S. divided the Persian Gulf into seven separate zones with each requiring a different mix of air and surface forces as well as strike and countermeasures (C/M) systems.

AAW

The topography of the straits and the gulf lends itself to sudden unexpected air attack. Terrain masking can limit ships to only 10 to 12 miles of low altitude warning or about five minutes of flight time. In this environment airborne sensors can add significantly to the ship's warning time. The Silkworm

missiles, with a range of 50 miles were deployed at Qeshm Island and Kuhestak and effectively covered the Strait of Hormuz.<sup>12</sup> This situation presented the first opportunity for the development of what would be numerous force employment innovations. LAMPS MK I H-2 helicopters were retrofitted with a defensive package designed to cope with the missile threat. This so called MEF package involved removing much of the ASW gear and adding M-60 machine guns and the ALQ-167 (V) IR detector/jammer for self protection as well as DLQ-3 chaff dispensers, smoke flares, and the AAQ-16 FLIR (Forward Looking Infrared Radar).<sup>13</sup> These aircraft flew a standard racetrack pattern at a set altitude along the threat axis as the ships they were assigned to protect transitted the straits. The helos were essentially employed in a point defense role where they could detect and subsequently decoy any missiles launched from the Iranian coast.<sup>14</sup>

Iranian placement of Silkworm missiles on the Faw peninsuls led to another innovative creation. With the government paying the cost, the Naval Research Lab developed a specially shaped radar reflector. These reflectors were designed to provide an especially inviting target to the Silkworms. Approximately 20 of these reflectors were produced and mounted on barges moored off the coast of Kuwait. At least one missile targeted on the Sea Island oil terminal ended up hitting one of these barges instead.<sup>15</sup>

MIW

As earlier stated, Iran was able to exploit U.S. weaknesses in mine warfare. Initial efforts by ships involved in the escort mission were limited to reducing speed to three to five knots and posting lookouts on the bow. Here again the LAMPS helicopters were quickly cast into a mine hunting role where they would patrol ahead of the ships looking for floating mines and whenever possible detonate them with gunfire. There were obvious limitations to these tactics since the aircraft could not detect deep mines nor could they sweep any of those they did find. One innovative technique that the helo crews developed was to use the FLIR to spot mines floating at or near the surface. This technique was really only effective late in the afternoon when the radiant energy absorbed by the mine created enough of a thermal image to enable it to show up against the surrounding water.<sup>16</sup> Another improvised solution involved using two tugs provided by Kuwait. A cable connecting the tugs and dragged through shipping channels was very effective in removing moored mines.<sup>17</sup> While the United States could do little to improve its mine countermeasures performance, it could and did intend to do something about the Iranian mines before they were deployed.

Six army helicopters arrived on 1 August and on 14 August the USS Guadalcanal arrived with four AMCM (airborne mine countermeasures) helicopters and Contingency MAGTF (Marine Air Ground Task Force) 2-88. The army helicopters consisted of two 3-aircraft detachments from Task Force 160. Each det consisted



of one MH-6 equipped for surveillance and target identification and two AH-6 attack helicopters equipped with guns and rockets. These aircraft were embarked on ships with LAMPS Dets and flown only at night.

The Marine special purpose units are small forces organized to accomplish a specific mission. These forces are normally composed of Marines highly trained in day or night raid and strike operations and may have considerable surveillance and reconnaissance capability.<sup>18</sup>

#### COMMAND & CONTROL

The mining of the Bridgeton had two unanticipated yet beneficial consequences. The moderate gulf states which here-to-fore had been reluctant to appear to be favoring either side suddenly realized that Iran, willing and able to challenge the U.S., represented a grave threat to their own security. As a result offers of landing rights and basing facilities were made.

The Pentagon immediately accepted a Kuwaiti offer to lease two large barges used in off-shore oil operations from the Brown and Root company. These barges, the "Hercules" and the smaller "Wimbrown 7", were positioned in the vicinity of Farsi Island in the northern Gulf. Farsi Island was known to be a base from which the Iranian naval Guards operated. "These barges avoided the problems inherent in any formal U.S. base on (foreign) territory, but gave the U.S. a facility where it could stage attack, reconnaissance, and mine warfare

radars, intelligence sensors, and electronic warfare equipment."<sup>19</sup> From their position just outside the Iranian exclusion zone, the special forces units which had been deployed to the Gulf could monitor activity north and south of Farsi. Air defense coverage was provided by a "shooter", either an FFG or a CG. With fueling facilities and accommodations for roughly 200 personnel they offered yet another example of how the U.S. was able to adapt to the demands of the situation in dealing with the Iranian threat.

#### ASUW

The first of these barges did not become operational until early October. Prior to that the army helicopters operated very effectively from navy ships. An example of just how effective they were was the attack on the Iran Ajr. On the night of 21 September following an attack on the British tanker Gentle Breeze, helicopters from the frigate Jarret launched and flew to within less than mile of the Iranian LST. Operating with a silenced rotor system and equipped with target acquisition sensors and passive light intensifiers they observed the crew lay several mines. Then, under strict peacetime rules of engagement (PRCE), the crews requested permission to attack. Permission was given and the helicopters fired on the ship with 2.75 mm rockets and machine guns. The ship was disabled and navy SEALs from the USS Guadalcanal then seized the vessel and 26 members of its crew.<sup>20</sup>

The beauty of this one operation was such that it would

The beauty of this one operation was such that it would make an excellent case study for the way we might want to conduct the kind of small scale joint operations we are likely to see in the future. To highlight some of the key points; the Iran Ajr was tracked from the time it was loaded out in port using national intelligence assets and air force AWACS aircraft. The attack was conducted using army helicopters operating from navy ships. It was a measured act of self-defense conducted in response to a hostile act in order to protect American lives and property. Finally, because we were not at war with Iran the prisoners who had been taken were quickly repatriated.

#### AEW

Later, as the surveillance operations became better established, the army would use OH-58D AHIPs, short for army helicopter improvement program, for target acquisition in tandem with UH-60B Black Hawks outfitted for attack. These aircraft would fly "canned" routes at night looking for any activity of a questionable nature. While these aircraft were perfectly capable of operating on their own, it was decided to employ what is easily the most versatile helicopter in the navy inventory, the SH-60B, in still another innovative role--that of airborne early warning (AEW). With its APS-124 radar and its ability to data link with ships 150 miles away, the LAMPS Mk III was able to watch the routes and prevent the army aircraft from encountering any undesirable close calls.

## DESERT STORM

Desert Storm is worth mentioning here for the one area that did not get exercised during Earnest Will and that is combat search and rescue (CSAR). I have used the term CSAR rather than the more recent navy creation "strike rescue" deliberately. From my own experiences with the NATO SAR Working Party and our allies in the ASCC (Air Standardization Coordinating Committee) the only commonly recognized term is combat SAR. In addition, the battle force commander in the Persian Gulf, created a CSAR SAG to perform the mission. This SAG consisted of the destroyer Leftwich, the frigates Nicholas and Curts along with two Kuwaiti patrol boats and a barge. Units assigned included navy SEALs, two SH-60s, one SH-3 and three AHIPs armed with Hellfire and Stinger missiles, Zuni rockets and 50 cal. machine guns.

The Joint Rescue Coordination Center (JRCC) in Riyadh under the auspices of the JFACC (Joint Force Air Component Commander) had divided the Kuwaiti Theater of Operations (KTO) among three component commands, NAVCENT, SOCCENT AND AFCENT. Each command had responsibility for a particular geographic region of the KTO. NAVCENT's area of responsibility included the Red Sea and the northern Gulf up to 40 miles inland. One reason for the navy's significant role in this mission was that the air force MH-60G PAVE HAWKS had very little night over water hover capability.<sup>21</sup>

## CONCLUSIONS

1. Commanders and policy makers must assume that third world belligerents will use every weapon and every level of technology available to them.

2. In allocating forces and in deploying weapons planners cannot afford to rely solely on the principle of mass or be inordinately swayed by the siren song of high technology. Nothing can take the place of military leaders, at all levels of the chain of command, who are prepared to change their tactics when the situation dictates. The Marine Corps has a phrase that covers this imperative: "adapt and overcome".

3. Our weapon systems are too focused on total war against a high tech opponent. As one wag put it: 'The capability to deal with massed Backfire bombers is not what you need to deal with a hang glider.'

4. The attack on the USS Stark and the explosive growth of world wide arms sales mean that no system can be assumed to be friendly. Many of the weapons we faced in the Persian Gulf were manufactured in the United States or in countries we count as our allies, France, Great Britain and Germany as well as neutral countries like Sweden.<sup>22</sup> What's more, new weapons are finding their way into the arsenals of third world countries at a much faster rate. Stinger-POST, a follow-on to

the Stinger shoulder-fired missile with improved infrared C/M capability, which was first deployed in FY-87 later showed up among the weapons the IRGC were using.

The obvious lesson to be drawn from all this is that we must accept the fact that in all future conflicts we are very likely to wind up defending against our own weapons and so we had better be prepared for it.

. 5. Force reductions, budget constraints, political instability and a wider range of third world threats will challenge the navy as it strives to meet its global commitments. VLS platforms like the Aegis cruiser and the now proven performance of the cruise missile have given the navy the capability to deploy its ships in new ways. Battle groups can be tailored for specific threats and regions. In addition, airborne sensors provide more effective air and naval battle management. SSSC, ESM, naval gunfire support, over the horizon targeting, close air support and air interdiction are some of the missions which can benefit from the forward C<sup>3</sup>/I capability they offer. The ability of army and air force as well as a variety of navy helicopters to operate from these ships and the vast array of capabilities they put at the disposal of the warfare commander mean that aircraft carriers can be reserved for those contingencies that definitely require their presence.

6. Redundant and overlapping capabilities are no longer

affordable and will be eliminated. Support for joint operations and the ability to integrate the unique capabilities of the army and air force will be essential to the success of future military operations. This translates into a need for more joint exercises, a need which will be increasingly difficult to address as budgets continue to shrink.

## RECOMMENDATIONS

1. Hazardous environment training (HET) should be made a part of all squadron and FRS training programs. While virtually all the MEF modifications were to LAMPS aircraft, HC units routinely operated in the same environment and were exposed to the same risks.<sup>22</sup>

2. Ships and helicopters must be equipped with defensive and C/M systems that enable them to operate in the face of low level third world threats. Emphasis needs to be placed on short range defense against anti-ship missiles. In the same vein, there is much in the way of existing off-the-shelf technology that is or might be suitable for helicopters, but requires testing and certification for use in a naval environment.

3. Early warning systems should be periodically reviewed to determine if they are capable of detecting the latest updates of western designed missiles. The topographic and climatic conditions prevailing in likely areas of operation should be part of the evaluation criteria.

4. Joint operations planning at the operational and tactical level needs to be expanded in order to develop the experience base of lower level staffs. Our junior officers have proven themselves to be expert at learning and



demonstrating their warfighting skills, there is no reason to suspect they wouldn't be just as successful learning the joint perspective at an earlier point in their career.

5. Joint doctrine and an understanding of strike operations, C<sup>3</sup>I, electronic warfare, intelligence functions and the utilization space assets within the joint environment need to be incorporated into the curricula of fleet schools and training programs.

As the world becomes a more dangerous place, the means we have to protect our vital interests are diminishing. We have no choice, but to get smarter at using the resources that remain. Again in the words of General Crist:

"As we move into an uncertain period of transition, our thinking should not be bounded by past ways of doing business or preconceived ideas. Innovation, interoperability and imagination have been the hallmarks in the Gulf. Not a bad example for those who will be responsible for charting the course of this nation's armed forces in the future."<sup>24</sup>

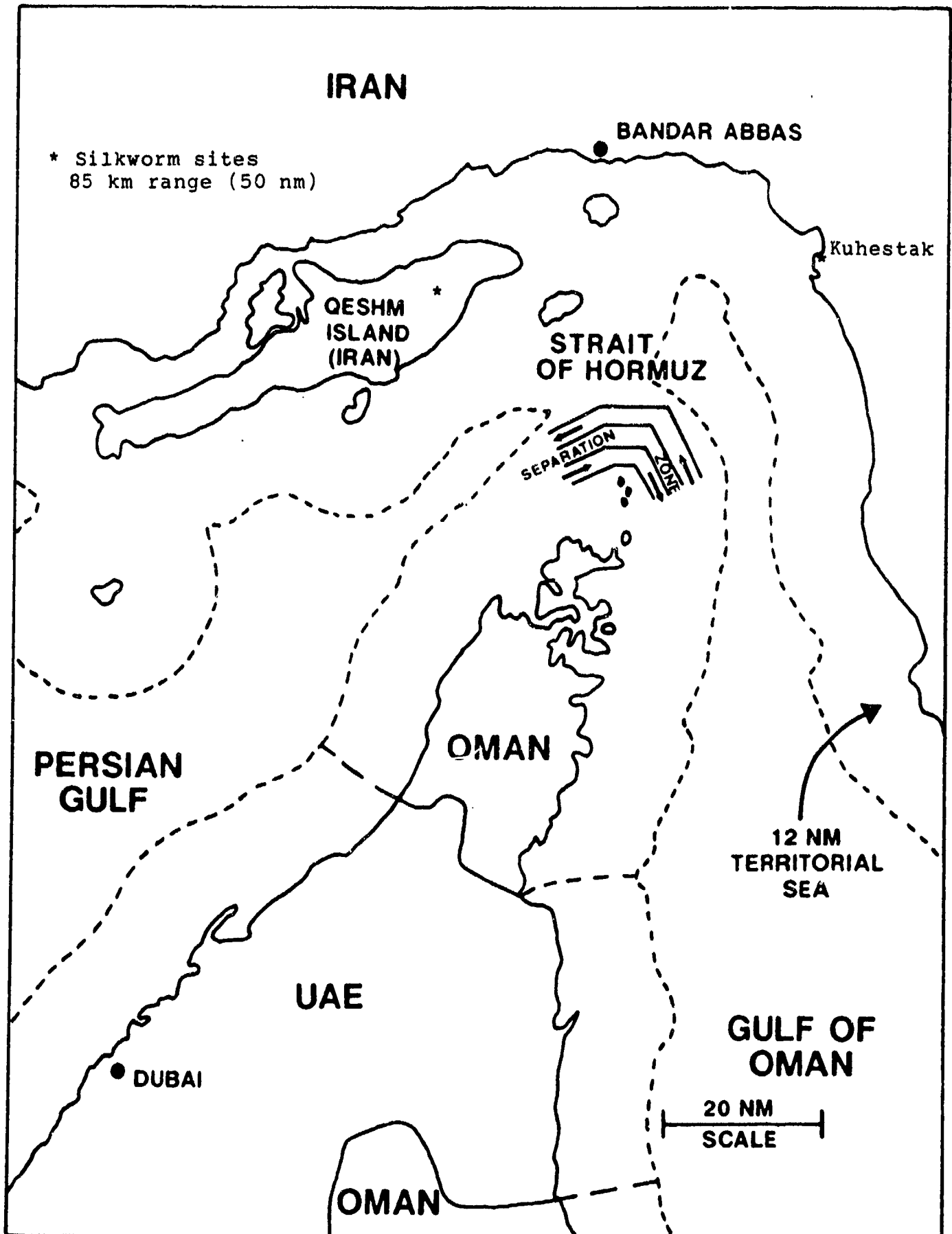


Figure 1

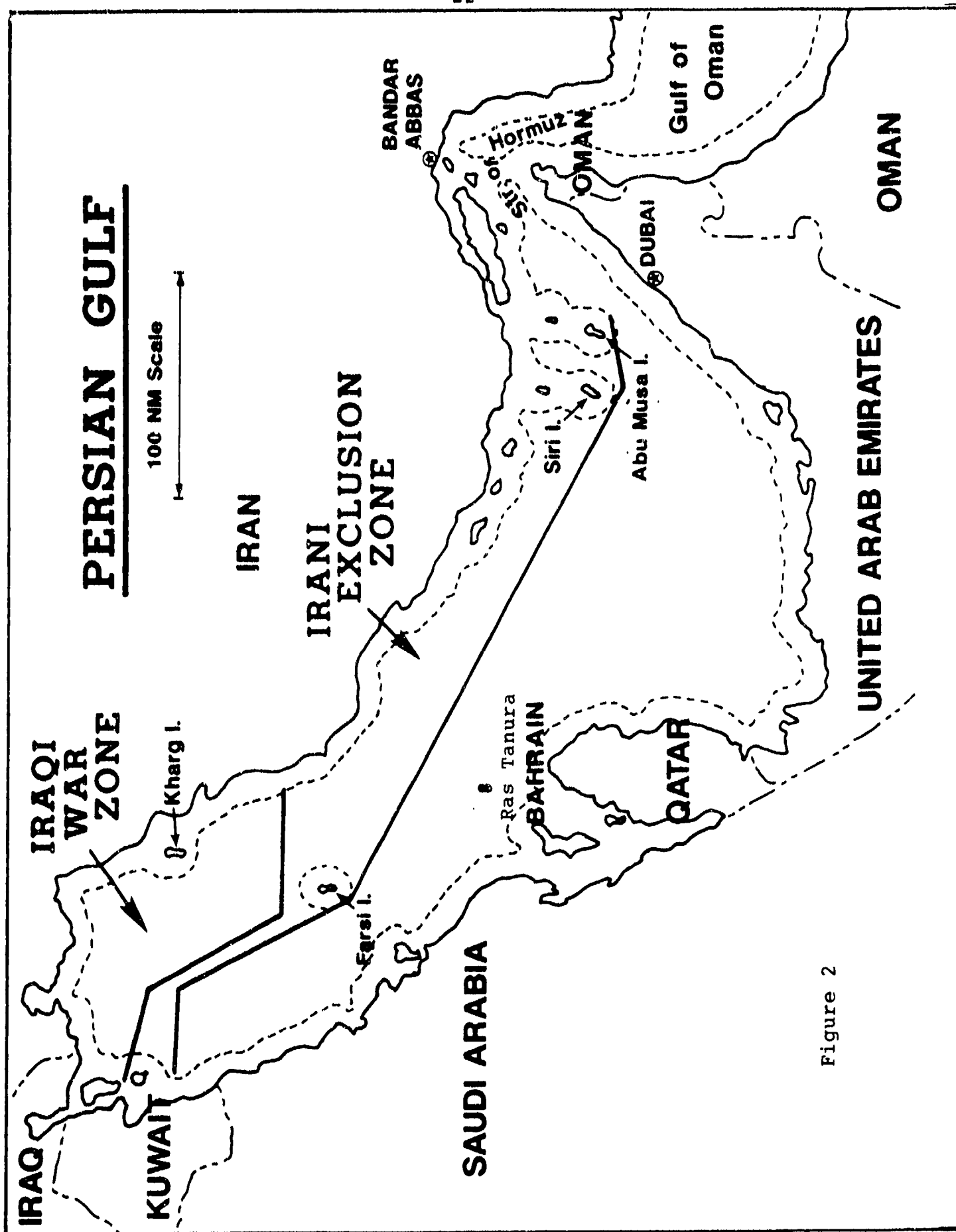


Figure 2

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